



The New York Academy of Sciences
January 19-22, 1994

**Inhibition of Matrix
Metalloproteinases:
Therapeutic Potential**

Joint Sponsor:

Long Island Jewish Medical Center
The Long Island Campus for the
Albert Einstein College of Medicine

Conference Chairs:

Robert A. Greenwald, M.D.
Division of Rheumatology
Long Island Jewish Medical Center
New Hyde Park, New York

Lorne M. Golub, D.M.D.
Department of Oral Biology and Pathology
State University of New York
School of Dental Medicine
Stony Brook, New York

Location:

Wyndham Harbour Island Hotel
725 S. Harbour Island Boulevard
Tampa, Florida 33602
Tel (813) 229-5400
Fax (813) 229-8322

See back of program for registration and hotel reservation details.

THE NEW YORK ACADEMY OF SCIENCES

Since 1817, the New York Academy of Sciences has been promoting the national and international advancement of science while serving as a focal point of scientific and technological activity. Its goals are to:

- Advance scientific research and discovery;
- Publish and distribute the results of research;
- Promote science education;
- Provide a forum for the discussion and interpretation of topical issues in science and science policy; and
- Enhance public understanding of science and its implications for society.

The Academy has an international membership of approximately 38,000 scientists worldwide, representing more than 100 countries.

ACADEMY CONFERENCES

The Academy's central scientific activity is organizing conferences and symposia that gather leading researchers to discuss current scientific subjects.

The Academy sponsors approximately 20 international conferences each year in cities all over the world. More than 2,300 scientists attend these meetings in addition to the more than 500 scientists who present papers on the most recent developments in their fields. Speakers have traveled from 26 different countries to discuss developments in such diverse fields as biology, chemistry, mathematics, ethics and physics.

ANNALS

The Annals are the major scientific publication of the Academy and comprise the proceedings of all the conferences held by the Academy as well as those of other selected scientific meetings. Containing up-to-date studies and research findings, these volumes are disseminated to libraries of scientific, medical, and educational institutions worldwide and are made available to Academy members and individual buyers. About 30 volumes of the Annals are published each year.

CONFERENCE THEME

The conference will deal with strategies for inhibition of matrix metalloproteinases which have been implicated in human disease, including collagenase, gelatinase, and stromelysin. These enzymes appear to be pathologically increased in a wide variety of disease states including rheumatoid and osteoarthritis, periodontal disease, diabetes, ophthalmologic conditions, neoplasia, dermatologic disorders, metabolic bone disease, and orthopaedic conditions. Identification of agents which might inhibit collagenase and other MMPs has long been a reasonable therapeutic goal for modulation of connective tissue degradation. In view of the wide range of potential applications for MMP inhibitors, and the diversity of theoretically useful agents, a multidisciplinary conference to discuss mechanisms of action and models for drug development is expected to contribute substantially to progress in the field.

We acknowledge educational grants from the following:

CONFERENCE SUPPORTERS

Collagenex, Inc.
Pfizer Labs
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CONFERENCE CONTRIBUTORS

Abbott Laboratories
Block Drug Company, Inc.
Boehringer Ingelheim Pharmaceuticals, Inc.
Glycomed
Hoffmann-La Roche Inc.
Miles, Inc.
OsteoArthritis Sciences, Inc.
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The Procter & Gamble Company
The Upjohn Company
Warner-Lambert Consumer Health Products Group
Warner-Lambert/Parke-Davis
Wyeth-Ayerst Research

Contributions received after the printing of this program will be acknowledged in the Abstract Booklet distributed at the conference and in the Annal resulting from the conference.

ACCME CREDIT

The New York Academy of Sciences and the Long Island Jewish Medical Center are accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

This conference has been designated as a continuing medical education activity for 22 credit hours in Category I of the Physician's Recognition Award of the American Medical Association by *either* The New York Academy of Sciences *or* Long Island Jewish Medical Center.

CONFERENCE SITE

The Wyndham Harbour Island Hotel is on the north shore of Harbour Island, a 177 acre urban development across Garrison Channel from downtown Tampa. It is a 10 minute walk or a one minute ride on "The People Mover" (an elevated air-cushion train) to the central business district.

The interchange of I-275 and I-4 is close by and Tampa International Airport is only 15 minutes away. If you are driving, parking is available for a \$5.00 overnight charge. Daily parking is also available on an hourly basis.

A tropically landscaped heated pool, overlooking the waterfront, is available on the property. There are guest privileges at the Harbour Island Athletic Club, featuring 20 tennis courts, 5 racquetball courts, 2 squash courts, lap pool, nautilus and hydro fitness room, aerobics, gymnasium and health club. Golf, tennis, boating and fishing charters can be arranged.

The Wyndham Harbour Island Hotel has many area attractions nearby: Old Hyde Park—5 minutes, Ybor City—10 minutes, Tampa Stadium—15 minutes, Adventure Island—20 minutes, Busch Gardens—20 minutes, Derby Lanes—20 minutes, Tampa Bay Downs—25 minutes, Gulf Beaches—30 minutes, Boardwalk and Baseball—45 minutes, Cypress Gardens—45 minutes, Walt Disney World—1 hour, Epcot Center—1 hour, and Sea World—1 hour.

GROUND TRANSPORTATION INFORMATION

Shuttle Service

The Wyndham Harbour Island Hotel is pleased to provide complimentary transportation to and from the Tampa International Airport from 7:00 AM to 11:00 PM upon request. When you arrive at the airport, a courtesy phone is available in the baggage claim area for you to call the hotel and make arrangements for your pick up.

Wednesday
January 19, 1994

5:00-8:30 PM **Registration**
Garden

6:30-8:30 PM **Welcome Reception**
Terrace

Thursday
January 20, 1994

All Scientific Sessions are held in Ballroom I.
Posters will be on display in the Ballroom Foyer.

8:00 AM-4:45 PM **Registration**
Garden

8:30-8:45 AM **Welcome Remarks and Introduction**
Robert A. Greenwald, M.D.
Conference Chair

8:45 AM-12:00 PM **Session I**

Overview

Session Chair:

Constance Brinckerhoff, Ph.D.
Department of Biochemistry
Dartmouth Medical School
Hanover, New Hampshire

Each paper in this session includes 20 minutes for presentation followed by 10 minutes for discussion.

- 8:45 1. Keynote Address: Clinical Importance of MMPs and Inhibitors

Stephen M. Krane, M.D.
Department of Medicine
Harvard Medical School
Massachusetts General Hospital
Boston, Massachusetts

- 9:15 2. The Family of MMPs

J. Frederick Woessner, Jr., Ph.D.
Department of Biochemistry and Molecular Biology
University of Miami
School of Medicine
Miami, Florida

- 9:45 3. Structure-Function Relations in MMPs

Harold Van Wart, Ph.D.
Institute of Biochemistry and Cell Biology
Syntex Discovery Research
Palo Alto, California

10:15-10:45 AM Intermission

- 10:45 4. Regulation of MMP Activity

Gillian Murphy, Ph.D.
Department of Cell and Molecular Biology
Strangeways Research Laboratory
Cambridge, England

- 11:15 5. Regulation of MMP Expression

Lynn Matrisian, Ph.D.
Department of Cell Biology
Vanderbilt University
Nashville, Tennessee

11:45 AM-12:00 PM General Discussion

12:00-1:20 PM Conference Luncheon

Terrace

1:20-4:45 PM Session II

TIMP-Mechanisms and Applications

Session Chair:

*Gillian Murphy, Ph.D.
Department of Cell and Molecular Biology
Strangeways Research Laboratory
Cambridge, England*

Each paper in this session includes 15 minutes for presentation followed by 5 minutes for discussion.

1:20 6. Induction of TIMP

*Christopher M. Overall, Ph.D.
Department of Clinical Dental Sciences
University of British Columbia
Vancouver, Canada*

1:40 7. TIMP in Tumor Progression: A Structure-Function Approach

*David Denhardt, Ph.D.
Department of Biological Sciences
Rutgers University
Piscataway, New Jersey*

2:00 8. Mechanism of TIMP-MMP Interaction

*Michael J. Banda, Ph.D.
Laboratory of Radiobiology and
Environmental Health
University of California, San Francisco
San Francisco, California*

2:20 9. Role of TIMP and MMP Inhibition in Preventing Connective Tissue Breakdown

*Tim E. Cawston, Ph.D.
Rheumatology Research Unit
Addenbrooke's Hospital
Cambridge, England*

2:40-3:10 PM Intermission

3:10 10. Dental Applications of TIMPs

Henning Birkedal-Hansen, D.D.S.
Department of Oral Biology
University of Alabama
School of Dentistry
Birmingham, Alabama

3:30 11. TIMP and Stromelysin Levels in Tissues

Michael W. Lark, Ph.D.
Department of Biochemical and Molecular Pathology
Merck Research Laboratories
Rahway, New Jersey

3:50-4:45 PM General Discussion

4:45-6:45 PM Poster Session and Reception

Ballroom Foyer

*Poster Presenters will be available for
discussion of posters at this time.*

Friday
January 21, 1994

7:30 AM-5:00 PM Registration
Garden

8:00 AM-12:10 PM Session III

Tetracyclines—Dental

Session Chair:

Lorne M. Golub, D.M.D.
Conference Chair

8:00 12. Tetracyclines as MMP Inhibitors in Periodontal Disease

Lorne M. Golub, D.M.D.
Conference Chair

Each paper includes 15 minutes for presentation followed by 5 minutes for discussion, except from 9:05 to 9:25 AM.

8:45 13. Effect of Tetracyclines on Salivary and GCF Collagenase

Timo Sorsa, D.D.S., Ph.D.
Department of Periodontology
University of Helsinki
Helsinki, Finland

9:05 14. Clinical Experience: Adult Periodontitis

Seb G. Ciancio, D.D.S.
Department of Periodontology and Pharmacology
State University of New York at Buffalo
Schools of Medicine and Dentistry
Buffalo, New York

9:15 15. Inhibition of Oral Epithelial Cell MMPs by Tetracyclines

V.J. Uitto, D.D.S., Ph.D.
Department of Oral Biology
University of British Columbia
Vancouver, Canada

- 9:25 16. Diagnostic Accuracy of Collagenase in Periodontitis

Christopher McCulloch, D.D.S., Ph.D.
Department of Dentistry
University of Toronto
Toronto, Canada

- 9:45 17. Modulation of Bone Resorption

Barry R. Rifkin, D.D.S., Ph.D.
Division of Basic Sciences
New York University
College of Dentistry
New York, New York

10:05-10:30 AM General Discussion

10:30-11:00 AM Intermission

11:00 AM-12:10 PM Session IV

Tetracyclines—Medical

Session Chair:

Robert A. Greenwald, M.D.
Conference Chair

- 11:00 18. Studies of MMP Inhibition in Animal and Human Arthritis

Robert A. Greenwald, M.D.
Conference Chair

Each paper includes 15 minutes for presentation followed by 5 minutes for discussion.

- 11:30 19. Canine Osteoarthritis Models

Kenneth D. Brandt, M.D.
Department of Medicine and Rheumatology
Indiana University
School of Medicine
Indianapolis, Indiana

- 11:50 20. Application of Peptide-Based MMP Inhibitors in Corneal Ulceration

Robert D. Gray, Ph.D.
Department of Biochemistry
University of Louisville
School of Medicine
Louisville, Kentucky

- 12:10-1:15 PM Conference Luncheon
Terrace

- 1:15-5:00 PM Session V

MMPs and Inhibitors in Cancer/Metastasis

Session Chair:

James P. Quigley, Ph.D.
Department of Pathology
State University of New York at Stony Brook
Stony Brook, New York

- 1:15 21. Overview

James P. Quigley, Ph.D.
Session Chair

Each paper in this session includes 15 minutes for presentation followed by 5 minutes for discussion.

- 1:30 22. Clinical Trials of a Low MW Inhibitor in Cancer

Peter D. Brown, D.Phil.
Department of Cancer Biology
British Bio-Technology Ltd.
Oxford, England

- 1:50 23. TIMP Inhibition of Tumor Invasion and Metastasis

Yves A. De Clerck, M.D.
Division of Hematology-Oncology
University of Southern California
Children's Hospital of Los Angeles
Los Angeles, California

2:10 24. Expression of TIMP

Andrew J.P. Docherty, Ph.D.
Department of Oncology
CellTech Ltd.
Slough, England

2:30 25. Genetic Manipulation of TIMP-2 in Human Melanoma Cells: Modulation of the Invasive Phenotype

William Stetler-Stevenson, M.D.
Laboratory of Pathology
National Cancer Institute
Bethesda, Maryland

2:50-3:15 PM Intermission

3:15 26. Monitoring Metastasis by Assay of MMPs and MMP-Inhibitor Complexes

Stanley Zucker, M.D.
Department of Medicine
State University of New York at Stony Brook
Veterans Affairs Medical Center
Stony Brook, New York

3:45 27. Inhibition of Angiogenesis/Neoplasia by Tetracyclines

Henry Brem, M.D.
Department of Neurosurgery
Johns Hopkins University
School of Medicine
Baltimore, Maryland

4:15-5:00 PM General Discussion

5:00-7:30 PM Dinner Break (on own)

7:30-9:30 PM Round Table Discussion

Design of Clinical Trials for Study of MMP Inhibitors

Chair:

Stephen M. Krane, M.D.
Department of Medicine
Harvard Medical School
Massachusetts General Hospital
Boston, Massachusetts

Introductory Remarks:

Robert A. Greenwald, M.D.
Conference Chair

Participants:

Arthritis

Kenneth D. Brandt, M.D.
Robert A. Greenwald, M.D.
Stephen M. Krane, M.D.

Periodontal

Lorne M. Golub, D.M.D.
Christopher McCulloch, D.D.S., Ph.D.
Timo Sorsa, D.D.S., Ph.D.

Cancer

Henry Brem, M.D.
Peter D. Brown, D.Phil.
Andrew J.P. Docherty, Ph.D.
William Stetler-Stevenson, M.D.
Stanley Zucker, M.D.

Saturday
January 22, 1994

7:30-10:30 AM Registration

8:00-10:00 AM Session VI

Selected Papers from Abstracts

Session Chair:

Robert A. Greenwald, M.D.

Conference Chair

Each paper includes 10 minutes for presentation followed by 5 minutes for discussion.

10:00-10:30 AM Intermission

10:30 AM-12:45 PM Session VII

Other Inhibitors

Session Chair:

Sanford R. Simon, Ph.D.

Departments of Biochemistry and Pathology

State University of New York at Stony Brook

Stony Brook, New York

Each paper includes 10 minutes for presentation followed by 5 minutes for discussion.

10:30 28. Anthracycline Inhibition of MMPs

Michael E. Maragoudakis, Ph.D.

Department of Pharmacology

University of Patras Medical School

Patras, Greece

10:45 29. Interaction of MMPs with α 2-Macroglobulin

Hideaki Nagase, Ph.D.

Department of Biochemistry and Molecular Biology

University of Kansas Medical Center

Kansas City, Kansas

11:00 30. Effect of MMPs on Elastase Inhibitors

Sanford R. Simon, Ph.D.
Session Chair

11:15 31. Low Molecular Weight Inhibitors in
Corneal Ulceration

Dick Galaray, Ph.D.
Glycomed, Inc.
Alameda, California

11:30 32. Monoclonal Antibodies to Human
92kDa Gelatinase

Deborah L. French, Ph.D.
Department of Pathology
State University of New York at Stony Brook
Stony Brook, New York

11:45 33. Retinoids

Constance Brinckerhoff, Ph.D.
Department of Biochemistry
Dartmouth Medical School
Hanover, New Hampshire

12:00-12:45 PM General Discussion

12:45 PM Closing Remarks

Robert A. Greenwald, M.D.
Conference Chair

Lorne M. Golub, D.M.D.
Conference Chair

7:00 PM End of Conference Subscription Banquet
\$35 per person

(Refer to the Conference Registration Form in the
back of the program for payment details.)

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SESSION CHAIRS

Session I: Brinckerhoff, C.
Session II: Murphy, G.
Session III: Golub, L.M.
Session IV: Greenwald, R.A.
Session V: Quigley, J.P.
Session VI: Greenwald, R.A.
Session VII: Simon, S.R.

CONFERENCE REGISTRATION FEE INCLUDES

- Welcome Reception (January 19)
- Entrance to Scientific Sessions
- Coffee/Tea (During Intermissions)
- Luncheons (January 20 and 21)
- Entrance to Poster Session/Reception
- Conference Materials
- Continuing Medical Education Credits

SUBSCRIPTION BANQUET

A separate subscription fee of \$35 is required for the Saturday, January 22, Conference Banquet. For payment details, please refer to the Conference Registration Form, which follows. Payment is required prior to the meeting.

REFUNDS

Refund requests postmarked on or before December 13 will be issued less an administrative fee of \$25.00. Absolutely no refunds will be honored after this date.

REGISTRATION HOURS

The Conference Registration Desk will be open on Wednesday, January 19, 1994 from 5:00 to 8:30 PM in the Garden. Please check in at this desk to pick up your registration materials. The Conference Registration Desk will re-open on Thursday, January 20, at 8:00 AM and will remain open for the duration of the conference.

MEMBERSHIP IN THE NEW YORK ACADEMY OF SCIENCES

As a participant in this conference, you will be offered the opportunity to become a member of the New York Academy of Sciences, which links more than 38,000 scientists across the United States and in more than 100 countries around the world. These members represent all fields of science, engineering and medicine. The Academy aims to advance science and science education, the dissemination of scientific information, the human rights of scientists, understanding of issues in science and technology policy and opportunity for women and minority groups in science.

Academy members enjoy a number of direct benefits, including:

- Reduced registration fees for about 20 major Academy conferences each year.
- One free volume of the *Annals of The New York Academy of Sciences* each year, and additional volumes at nominal prices.
- A subscription to the Academy's award-winning bimonthly magazine, *The Sciences*.
- The opportunity to participate in the activities of any of the Academy's 25 scientific sections.

For further information about Academy membership, inquire at the conference registration desk or call (212) 838-0230 or (800) 843-6927.

CONFERENCE REGISTRATION FORM

Inhibition of Matrix Metalloproteinases: Therapeutic Potential
January 19-22, 1994

Return this form with your full payment to:

Conference Department
New York Academy of Sciences
2 East 63rd Street
New York, New York 10021
Tel. (212) 838-0230 Fax (212) 838-5640
Please type or print all information.

First Name	Last Name		
Degree(s)			
Affiliation			
Mailing Address			
City	State	Country	Zip
Telephone Number		Fax Number	

CONFERENCE REGISTRATION FEES

(Check correct category and fee)

Poster Presenters pay full registration fees. Registration is waived for Speakers and Session Chairs only. Note: Conference Banquet is by separate Subscription. Remit payment with Conference Registration.

Conference registration postmarked:

	Before 12/13/93	After 12/13/93	Amount Enclosed
— NYAS Member Membership No. _____	\$295	\$320	_____
— Nonmember	\$395	\$420	_____
— Resident/Fellow	\$245	\$245	_____
— Student or Emeritus Member	\$170	\$170	_____
— Daily Registration Date(s) _____	\$150	\$150	_____
— Subscription Banquet 1/22*	\$ 35	\$ 35	_____

TOTAL REGISTRATION FEE ENCLOSED \$ _____

*The Saturday, January 22, Banquet is by separate subscription. If you wish to attend the banquet, please enclose the fee with your conference registration. Payment is required prior to the meeting.

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ADDITIONAL REGISTRATION INFORMATION

Students must have their department chair sign this form to qualify for the student registration fee.

Signature _____

Department and Title _____

REFUNDS

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METHOD OF PAYMENT

U.S. Bank Check made payable to:
The New York Academy of Sciences

or

Credit Card (Please complete all information)

MasterCard ☐ VISA ☐ American Express ☐

Credit Card Number _____

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HOW DID YOU LEARN OF THIS MEETING?

☐ NYAS Conference Schedule

☐ Conference Flyer

☐ From a colleague

☐ Advertisement in (Please Specify) _____

☐ Other (Please Specify) _____

HOTEL ACCOMMODATION FORM

Reservations must be received by **December 13, 1993.**

Mail directly to:

Reservations Manager
Wyndham Harbour Island Hotel
725 S. Harbour Island Boulevard
Tampa, Florida 33602
Telephone: (813) 229-5000
Fax: (813) 229-5322

THE NEW YORK ACADEMY OF SCIENCES

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Therapeutic Potential
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Please type or print all information.

First Name

Last Name

(Sharing With) Name

Affiliation

Mailing Address

City

State

Country

Zip Code

Telephone Number

Fax Number

Special group rates are available for the duration of your stay in
Tampa, Florida. Please send only 1 form per room.

Arrival Date _____ Departure Date _____

Number of people in the room _____

Request separate room bills? _____ Yes _____ No

\$ 105 _____ Single (1 person)

\$ 105 _____ Double (2 persons/1 bed)

\$ 105 _____ Double/Double (2 persons/2 beds)

(Room charge excludes 10.5% Florida State Sales and Occupancy
Taxes.)

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Complete the following if applicable:

- ☐ Confirmation requested
- ☐ Other special requests
(Special requests cannot be confirmed.)

CHECK-IN TIME: 3:00 PM
CHECK-OUT TIME: 12:00 Noon

**RESERVATIONS RECEIVED AFTER DECEMBER 13, 1993
WILL BE ACCEPTED ON A SPACE AVAILABLE BASIS
AND MAY BE SUBJECT TO A HIGHER RATE.**

Reservations are guaranteed with one night's deposit by check or credit card. In order to receive a refund, cancellations must be made by 12 noon, one day prior to your arrival date.

Please guarantee my reservation by:

- ☐ Reservation guaranteed by one night's deposit
(enclosed)
- ☐ Reservation guaranteed by my credit card (American Express,
Diner's Club, VISA, MasterCard or Discover)

Credit Card Name

Credit Card Number

Expiration Date

Name of Cardholder

Cardholder Signature

FOR GUARANTEED RESERVATIONS

I understand that I am liable for one night's deposit, which will be deducted from my deposit or billed through my credit card in the event that I do not cancel by 12:00 noon, one day prior to the arrival date indicated.

Signature

TENTATIVE CONFERENCE SCHEDULE

If you would like information about any of the conferences below, please circle the names of the conferences and return this page to The New York Academy of Sciences with your name and address on the reverse side. Program and registration information will be mailed approximately three months before each conference. You need not register for the conference to request information.

BIOLOGY OF α_2 -MACROGLOBULIN, ITS RECEPTOR AND RELATED PROTEINS

OCTOBER 11-14, 1993, MARINE BIOLOGICAL LABORATORY, WOODS HOLE, MASSACHUSETTS

Chairs: Wolfgang Borth, Mount Sinai Medical Center; Richard D. Feinman, SUNY Health Science Center at Brooklyn; Steven L. Gonias, University of Virginia Health Sciences Center; James P. Quigley, SUNY Health Sciences Center at Stony Brook; Dudley K. Strickland, American Red Cross

DNA: THE DOUBLE HELIX-FORTY YEARS: PERSPECTIVE AND PROSPECTIVE

OCTOBER 13-16, 1993, CHICAGO MARRIOTT DOWNTOWN, CHICAGO, ILLINOIS

Chair: Donald A. Chambers, The University of Illinois at Chicago

CELLULAR GENERATION, TRANSPORT AND EFFECTS OF EICOSANOIDS: BIOLOGICAL ROLES AND PHARMACOLOGICAL INTERVENTIONS

NOVEMBER 14-17, 1993, THE GRAND HOTEL, STOCKHOLM, SWEDEN

Chairs: Edward J. Goetzl, University of California, San Francisco; Marek Rola-Pleszczynski, University of Sherbrooke Faculty of Medicine, Canada

CORONARY ARTERY SPASM

FEBRUARY 22-25, 1994, NEW YORK HILTON AND TOWERS, NEW YORK

Chair: Stanley Kalsner, The City University of New York Medical School

BRAIN CORTICOSTEROID RECEPTORS: STUDIES ON MECHANISM, FUNCTION AND NEUROTOXICITY OF CORTICOSTEROID ACTION

MARCH 2-5, 1994, CRYSTAL GATEWAY MARRIOTT, ARLINGTON, VIRGINIA

Chairs: E.R. de Kloet, Leiden/Amsterdam Center for Drug Research, The Netherlands; Efrain C. Azmitia, New York University; Philip W. Landfield, University of Kentucky

T-CELL RECEPTOR USE IN HUMAN AUTOIMMUNE DISEASES

APRIL 18-21, 1994, DOUBLETREE HOTEL AT HORTON PLAZA, SAN DIEGO, CALIFORNIA

Chairs: Joel Buxbaum, New York University School of Medicine; Mark M. Davis, Howard Hughes Medical Institute, Stanford University

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